

Automotive climatic test cell

Direct 4 WD connection

Temperature range : -30°C to +45°C

0.1% repeatability on NEDC cycle

GREENMOT developed and has operated since 2011, an innovative automotive climatic test cell. This test cell has been designed to provide OEMs and Tier 1 suppliers large and highly repeatable testing conditions. This repeatability is especially guaranteed by direct mechanical connection (eliminating tire/roller dispersion) and GREENMOT robot driver (eliminating human driver dispersion). This high repeatability also leads to development productivity savings that makes engineers able to directly identify and quantify the impact of any modification on test results.



Applications

**Performance – Emission – Climatic – Automatic testing – Endurance
Energy flow mapping – Engine mapping – Hybrid powertrain development – Traction control**

Technical specifications

Mechanical power	260 kW
Torque per wheel	2 000 N.m
Maximum speed	145 km/h (16" wheel)
Thermal power	280 kW at 20°C
Temperature range	-30°C to +45°C
Humidity	Limited 75% of humidity
External fluid control <i>Including quick cooling capacity</i>	Coolant temperature control up to 200 kW 2 independent Oil temperature control up to 10 kW
Test cell mode	2 WD / 4 WD (with Front/Rear and Right/Left synchronous or independent control)
Control mode	By GREENMOT Robot Driver Road Load, constant torque or speed, manual control
Inertia simulation	Up to 4 T
Airflow	0.5 m ² section up to 120 km/h controlled by vehicle speed
Maximum vehicle size	9m (Length) x 3.5m (Width) x 3,8m (Height)
Maximum vehicle weight	4 T

Fuel & Gas analysis

Fuel measurement system	AVL KMA Mobile (High accuracy dynamic mass flow meter)
Combustion analysis	AVL Indimicro 4 channels
Gas analysis	Raw gas analysis + Intake Air mass flow meter
EGR	CO ₂ [20%]
Pre-catalyst sampling	AVL AMA i60 THC [60.000ppmC], CH ₄ [20.000ppmC], NO [10.000ppm], NO _x [10.000ppm], CO [10% / 5.000ppm], CO ₂ [20%], O ₂ [25%] Microsoot sensor AVL 483
Post-catalyst sampling	AVL AMA i60 THC [60.000ppmC], CH ₄ [20.000ppmC], CO [5.000ppm], CO ₂ [20%] Horiba Mexa One QLNX NO: 0-10ppm to 0-5000ppm NO ₂ : 0-5ppm to 0-2000ppm N ₂ O: 0-10ppm to 0-2000ppm NH ₃ : 0-5 to 0-2000ppm Particle counter - AVL 489 Opacimeter - AVL 439

Results

Measurements on Greenmot Test Bench with its Robot Driver

